WHAT IS CLAIMED IS:

1. A method for detecting whether a tissue is undergoing senescence, said method comprising the step of detecting the overexpression or the underexpression of a senescence-associated molecule of interest according to Table 1 in a subject, wherein overexpression or underexpression of said molecule is indicative of senescence.

2. The method of claim 1, wherein overexpression of said molecule is indicative of senescence, and wherein said molecule is overexpressed in said tissue.

3. The method of claim 1, wherein underexpression of said molecule is indicative of senescence, and wherein said molecule is underexpressed in said tissue.

4. The method of claim 1, said method comprising detecting an mRNA encoding said senescence-associated molecule.

5. The method of claim 1, said method comprising detecting said senescence-associated molecule in an immunoassay.

6. The method of claim 1, wherein said tissue of interest is the skin.

7. A method for identifying a modulator of senescence, said method comprising the steps of:

(a) culturing a cell in the presence of said modulator to form a first cell culture;

(b) contacting RNA or cDNA from said first cell culture with a probe which comprises a polynucleotide sequence that encodes a senescence-associated protein selected from the group consisting of the sequences set forth in Table 1;

(c) determining whether the amount of said probe which hybridizes to the RNA or cDNA from said first cell culture is increased or decreased relative to the amount of the probe which hybridizes to RNA or cDNA from a second cell culture grown in the absence of said modulator; and

(c) detecting the presence or absence of an increased proliferative potential in said first cell culture relative to said second cell culture.

8. The method of claim 7, wherein said first and second cell cultures are obtained from a skin cell.

9. A method for identifying a modulator of a young cell, said method comprising the steps of:

(a) culturing the cell in the presence of the modulator to form a first cell culture;

(b) contacting RNA from the first cell culture with a probe which comprises a polynucleotide sequence associated with senescence, wherein the sequence is selected from the group consisting of sequences set out in Table 1;

(c) determining whether the amount of said probe which hybridizes to the RNA from said first cell culture is increased or decrease relative to the amount of said probe which hybridizes to RNA from a second cell culture grown in the absence of said modulator; and,

(d) detecting the presence of an increased proliferative potential in the first cell culture relative to the second cell culture.

10. The method of claim 9, wherein said first and second cell cultures are obtained from a skin cell.

11. A method for inhibiting cell senescence, said method comprising the step of introducing into a cell a senescence-associated molecule according to Table 1, wherein underexpression of said senescence-associated molecule is indicative of senescence.

12. The method of claim 11, wherein said senescence-associated molecule is a nucleic acid encoding a senescence-associated protein.

13. The method of claim 11, wherein said senescence-associated molecule is a protein.

14. A method for inhibiting cell senescence, said method comprising the step of inhibiting in a cell a senescence-associated molecule according to Table 1, wherein overexpression of said senescence-associated molecule is indicative of senescence.

15. The method of claim 14, wherein said senescence-associated molecule is inhibited using an antisense polynucleotide.

16. The method of claim 14, wherein said senescence-associated molecule is inhibited using an antibody that specifically binds to the senescence-associated protein.

17. A method for inhibiting cell senescence in a patient in need thereof, said method comprising the step of administering to the patient a compound that modulates the senescence of a cell.

18. A kit for detecting whether a skin cell is undergoing senescence, said kit comprising:

(a) a probe which comprises a polynucleotide sequence according to Table 1, associated with skin aging; and

(b) a label for detecting the presence of said probe.

19. A cosmetic composition for inhibiting skin cell aging in a patient, said cosmetic composition comprising a compound that modulates the senescence of a cell

20. The cosmetic composition of claim 19, wherein said composition is in a form selected from the group consisting of gels, ointments, creams, emollients, lotions, powders, solutions, suspensions, sprays, pastes, oils, and foams.